

**REMARKS**

Claim 3 is currently amended. After entry of this Amendment, Claims 1-51 are pending and under consideration. The amendments of Claim 3 and rejections of Claims 1-51 are addressed in detail below.

**The Amendments of the Claims:**

Claim 3 is amended to better define the invention. The amendment of Claim 3 is grammatical in nature and does not change the scope of the claim.

**Objection to the Specification:**

The abstract of the disclosure is objected to under MPEP 608.01(b). The abstract is being corrected to limit the length of the disclosure less than 150 words. Reconsideration of the objection is respectfully requested.

**Claim Rejection under 35 U.S.C. 112:**

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 is being amended as enclosed and accordingly reconsideration of the rejection is respectfully requested.

**Claim Rejection under 35 U.S.C. 102:**

Claims 1-2, 4, 6, 8, 18, 20, 22, 24, 35, 37, 39 and 49 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0961138 to Miroshin *et al.* Applicant respectfully traverses.

As the Examiner knows, a claim is anticipated under 35 U.S.C. 102 only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. Applicant respectfully submits that Miroshin *et al.* do not teach each and every element of the above claims.

Miroshin *et al.* teach a light polarizer including a birefringent layer. The birefringent layer is anisotropically absorbing and has a refraction index that grows as the polarized light wavelength increases. See Claim 1 of Miroshin *et al.* Miroshin *et al.* further teach a liquid

crystal element that includes a polarizer comprising the birefringent anisotropically absorbing layer. See the text on page 24, paragraph 0205. As taught by Miroshin *et al.* throughout the disclosure, the characterizing feature of the birefringent anisotropically absorbing layer is a refraction index that grows as the polarizer light wavelength increases. See also the text on page 6, paragraph 0045. In other words, the interference extremum is realized at output of polarizer for at least one linearly-polarized light component. See the text on page 6, paragraph 0048.

However, Miroshin *et al.* do not teach or suggest a liquid crystal information display comprising a layer of a liquid crystal material between panels of functional layers, wherein *the layer of liquid crystal has parameters* providing interference extremum *at the exit of the display*. In sharp contrast to Miroshin *et al.* which teach a *polarizer* of interference type providing interference extremum *at the output of the polarizer*, in the present invention, the extremum is at the exit of the display, or at the boundary between two functional layers, or between the layer of liquid crystal material and a functional layer, and the extremum is provided by *parameters of a layer of liquid crystal material*, as recited in Claim 1, or by parameters of a layer of liquid crystal material and optical parameters of functional layers, as recited in Claims 4-17 of the present invention.

In the Office Action, the Examiner stated that “due to the liquid crystal nature of the organic dyes, the film formed by the oriented liquid crystalline dye is crystalline.” Applicant respectfully disagrees. As taught in *Liquid Crystals*, 1998, vol.24, N 3, 375-379 “The formation of a liquid crystalline main chain polymer by means of photopolymerization” and *Macromol. Chem.* 189, 185-194 (1988) “In-situ photopolymerization of an oriented liquid-crystalline acrylate”, copies of which are enclosed, even though a liquid crystalline substance is used in the manufacturing of the anisotropic polymers as described in these publications, the anisotropic polymers obtained do not possess crystalline structures. Miroshin *et al.* disclose a dichroic film but do not teach or suggest that the film has a crystalline structure. As taught in WO 02/63660 A1, a copy of which is enclosed, manufacturing conditions must be met to produce crystalline structures for anisotropic crystalline films.

Accordingly, Applicant respectfully requests reconsideration of the rejection of Claims 1-2, 4; 6, 8, 18, 20, 22, 24, 35, 37, 39 and 49 under 35 U.S.C.102(b) over Miroshin *et al.*

**Claim Rejection under 35 U.S.C. 103:**

Claims 3, 5, 7, 9-17, 21, 23, 25-34, 36, 38, 40-48 and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miroshin et al. Applicant respectfully traverses.

As the Examiner knows, to establish a proper *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation, either in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the cited reference relied upon by the Examiner to arrive at the claimed invention. Second, there must be a reasonable expectation that the suggested modification or combination would be successful. Finally, the prior art reference (or references when combined) must teach or suggest each and every limitation of the rejected claims. The teaching or suggestion to make the claimed modification or combination and the reasonable expectation of success must both be found in the prior art, and not based upon in the applicant's disclosure. M.P.E.P. §706.02. Applicant respectfully submits that a *prima facie* case is not established and Claims 3, 5, 7, 9-17, 21, 23, 25-34, 36, 38, 40-48 and 50-51 are non-obvious over Miroshin *et al.*

As stated above, Miroshin do not teach or suggest a liquid crystal information display comprising a layer of liquid crystal material between panels of functional layers wherein *the layer of liquid crystal material has parameters* providing at least one interference extremum of transmission or reflection *at the exit of the display* and/or *at the boundary between at least two functional layers* and/or *the layer of liquid crystal material and a functional layer*.

In the Office Action, the Examiner stated that Miroshin *et al.* teach that the number and parameter of the anisotropic layers in the display are coordinated (number and layer thickness selected) so as to provide interference extremum at the exit of the display. The Examiner specifically referred to the text on page 7, paragraphs 0055-60. Applicant respectfully points out that Miroshin *et al.* do not teach providing the interference extremum at the exit of the display. Miroshin *et al.* only teach selection of thickness and interference order for the birefringent layers to obtain interference extremum at the *output of the polarizer*. Miroshin *et al.* do not provide any teaching and suggestion on selection of parameters of the liquid crystal layer and/or functional layers to provide interference extremum at the exit of the display. Applicant respectfully submits that coordinating the numbers and parameters of all layers in the display to provide the

interference extremum at the exit of the display is not obvious. As known to one of ordinary skill in the field of LCD, due to different functions of different elements, the final liquid crystal display may not be interferential even though separate elements or separate multilayer elements are interferential.

In the Office Action, the Examiner further stated, referring to the text on page 26, paragraph 0243, that Miroshin et al. teach that an anisotropic liquid crystal layer is disposed on a transparent electrode and it would have been mere routine optimization to have made the electrode layer anisotropic. Applicant respectfully disagrees. Electrode layers in a display are traditionally isotropic. Applicant has invented and indeed it is one of the features of the invention that the electrode layers are anisotropic. Prior to the present invention, there is no teaching in the prior art of making an *anisotropic electrode layer*. Miroshin et al. only teach that “birefringent anisotropically absorbing layer of at least one polarizer is *disposed* on a transparent electrode”, however, Miroshin et al. do not teach that the electrode layers are anisotropic.

Reconsideration of the rejection of Claims 3, 5, 7, 9-17, 21, 23, 25-34, 36, 38, 40-48 and 50-51 under 35 U.S.C. 103(a) is respectfully requested.

Based on the foregoing, Applicants respectfully submit that the claims of the present application are in condition for allowance. An early indication of the same is therefore respectfully requested. If any matters can be resolved by telephone, the Examiner is invited to call the undersigned attorney at the telephone number listed below. The Commissioner is authorized to charge any additional required fees, or credit any overpayment, to Dorsey & Whitney LLP Deposit Account No. 50-2319 (Order No. A-71153/AJT/TJH (463031-8)).

Date: February 9, 2004

Respectfully submitted,



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